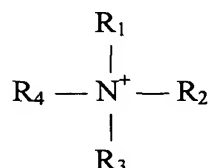


We claim:

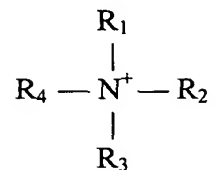
1. An aqueous polishing composition comprising:
a corrosion inhibitor for limiting removal of an interconnect metal;
an acidic pH; and
an organic-containing ammonium salt formed with



R_1 , R_2 , R_3 and R_4 are radicals, R_1 has a carbon chain length of 2 to 15 carbon atoms and the organic-containing ammonium salt has a concentration that accelerates TEOS removal and decreases removal of at least one coating selected from the group consisting of SiC, SiCN, Si₃N₄ and SiCO with at least one polishing pressure less than 21.7 kPa.

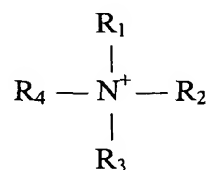
2. The composition of Claim 1, wherein R_1 is a substituted or unsubstituted aryl, alkyl, aralkyl, or alkaryl group that comprises 2 to 5 carbon atoms.
3. The composition of Claim 1, wherein the ammonium salt is formed with a compound comprising tetraethyl ammonium, tetrabutylammonium, benzyltributylammonium, benzyltrimethylammonium, benzyltriethylammonium, diallyldimethylammonium, diethylaminoethyl methacrylate, dimethylaminoethyl methacrylate, methacroyloxyethyltrimethylammonium, 3-(methacrylamido) propyltrimethylammonium, triethylenetetramine, tetramethylguanidine, hexylamine and mixtures thereof.
4. An aqueous polishing composition comprising, by weight percent:
0.05 to 15 abrasive particles;
0 to 10 oxidizing agent;
0.0025 to 6 a corrosion inhibitor for limiting removal of an interconnect metal;
a pH of less than 5; and

0.001 to 3 organic-containing ammonium salt formed with



R₁, R₂, R₃ and R₄ are radicals, R₁ has a carbon chain length of 2 to 15 carbon atoms and the organic-containing ammonium salt has a concentration that accelerates TEOS removal and decreases removal of at least one coating selected from the group consisting of SiC, SiCN, Si₃N₄ and SiCO with at least one polishing pressure less than 21.7 kPa.

5. The composition of Claim 4, wherein the abrasive comprises a silica, the oxidizing agent comprises hydrogen peroxide, the corrosion inhibitor comprises benzotriazole and the composition has a pH of less than 3 and an organic fluoride ammonium salt.
6. The composition of Claim 5, wherein the polishing composition has a pH of 2 to 3 adjusted with nitric acid.
7. The composition of Claim 4, wherein R₁ has a carbon chain length of 2 to 5.
8. A method for removing a layer from a semiconductor substrate comprising:
applying an aqueous polishing composition to the semiconductor substrate, the aqueous polishing composition comprising an organic-containing ammonium salt formed with



R₁, R₂, R₃ and R₄ are radicals, R₁ has a carbon chain length of 2 to 15 carbon atoms to accelerate removal of a silicon oxide-containing layer; and
polishing layer the silicon oxide-containing layer from the semiconductor substrate with a polishing pad to remove the silicon oxide-containing layer.

9. The method of claim 1 including the additional step of polishing a barrier layer with the aqueous polishing composition before removing the silicon oxide-containing layer.
10. The method of claim 1 wherein the TEOS layer is a top layer deposited on a bottom layer, the bottom layer comprises a coating selected from the group consisting of SiC, SiCN, Si₃N₄ and SiCO and the removing removes the top layer and leaves at least a portion of the bottom layer.